

- 10 — c) means for producing a first electrical output signal dependent on the intensity of the radiation detected by said first radiation detection means;
- d) second radiation detection means arrangeable in use in contact with the skin, tissue or organ of said patient, said second radiation detection means being spaced farther away from said emitter means than said first radiation detection means and be in a ranged to detect radiation which has been scattered and attenuated by the skin, tissue or organ of said patient;
- 15 — e) means for producing a second electrical output signal dependent on the intensity of the radiation detected by said second radiation means;
- f) processor means providing a quantitative measure of said substance in said
- 20 — living tissue, said quantitative measure being dependent on the ratio of said first and second output signals.

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Claim 55. A method for the non-invasive measurement of a substance in living tissue comprising:

contacting a patient with an emitter means and a first and second detection means;

5 emitting electromagnetic radiation through said emitter means into said patient;

detecting electromagnetic radiation which has been scattered and attenuated by said patient with said first and second radiation detection means; and

producing a quantitative measure of said substance in said living tissue by

10 determining the ratio of the intensities of said electromagnetic radiation detected by said first and second radiation detection means.--